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Redaktioneller Hinweis:

Erfreulicherweise erscheint im vorliegenden Heft wieder ein Aufsatz, der auf die "Schriften aus dem Nachlaß" von Ferdinand SOMMER (München 1977) Bezug nimmt: Eva TICHY, Beobachtungen zur homerischen Synizese, p. 187 ff.

Die Redaktion erinnert in diesem Zusammenhang an ihre Einladung zur Weiterarbeit an SOMMERs unvollendeten Schriften: MSS 37 (1978) p. 177.

Ruth Laila Schmidt
with Mohammad Zarin

The Phonology and Tonal System of Pālas /kohis'tyõ:/ Shina

1. Introduction

Kohistyõ (phonemically, /kohis'tyõ:/), is a dialect of the Dardic language family, spoken in the Kohistan region of the Indus River basin in an area stretching from the left bank valley of Pālas northward to that of Jalkoṭ. It appears quite closely related to Shina; and indeed, the dialects of this region are identified by T. GRAHAME BAILEY as belonging to Shina[1].

The region has throughout history remained among the most isolated in South Asia due to its extremely rugged topography. As BARTH describes it,

> The Indus drainage area is characterized by the greatest extremes in relief, from mountain peaks of 18 - 19000 ft. to the bottom of the Indus gorge, at less than 3000 ft. altitude, and by valleys where the sheer rock face rises unbroken for several thousand feet[2].

The side valleys draining into the Indus are usually narrower at their mouths than further up, and this feature combined with the difficulty of constructing and maintaining trails along steep rock slopes where virtually no ground cover exists to hold the soil in place, adds to the inaccessibility of the region. Indigenous bridges permit communication by foot across the rivers; these terrifying contraptions (so evocatively described by BIDDULPH[3]) have in many cases only recently been replaced by more modern constructions.

Due to its inaccessibility, outside penetration of the area has been minimal until recently. In 1956, according to BARTH, "such a standard item as tea has not yet penetrated to Kohistan"[4]. The local inhabitants, on the other hand, are

transhumant and have a yearly cycle of migration which takes them from the valley bottoms in the winter to maize agricultural areas in the spring and fall, and to high mountain pastures (up to an altitude of 12000 feet) during the summers[5]. They also have a fairly high rate of migration within the area, based on marriage and alliance networks, and out to the towns and cities of the Indus plains, due to a variety of reasons - overpopulation and the consequent need for surplus labor to seek employment elsewhere; plus a variety of social factors. One of the most noteworthy of these is the existence of a customary law imposing severe penalties on misconduct between the sexes. Adultery or elopement is punishable by death for both offenders, and this conflict cannot be resolved by arbitration or payment of a fine; nor will the offenders' families offer them protection. In the case of elopement, even if the boy succeeds in effecting a reconciliation between the two families, the couple will be ostracized by society in general, and consequently have no option but to move out of the region[6]. Another common cause of absconding is the commission of murders by persons whose qoum, or tribe, is not sufficiently powerful to protect them[7]. Outward migration has been considerably facilitated in recent years by the construction of the Karakoram Highway along the Indus River, and by improvement of roads generally.

A picture thus emerges of an area in which the indigenous cultural and linguistic patterns have been little disturbed by external influences until very recently. Within the region, however, localized migrations and network patterns foster links which serve to some extent to reduce the heterogeneity and isolation of the region.

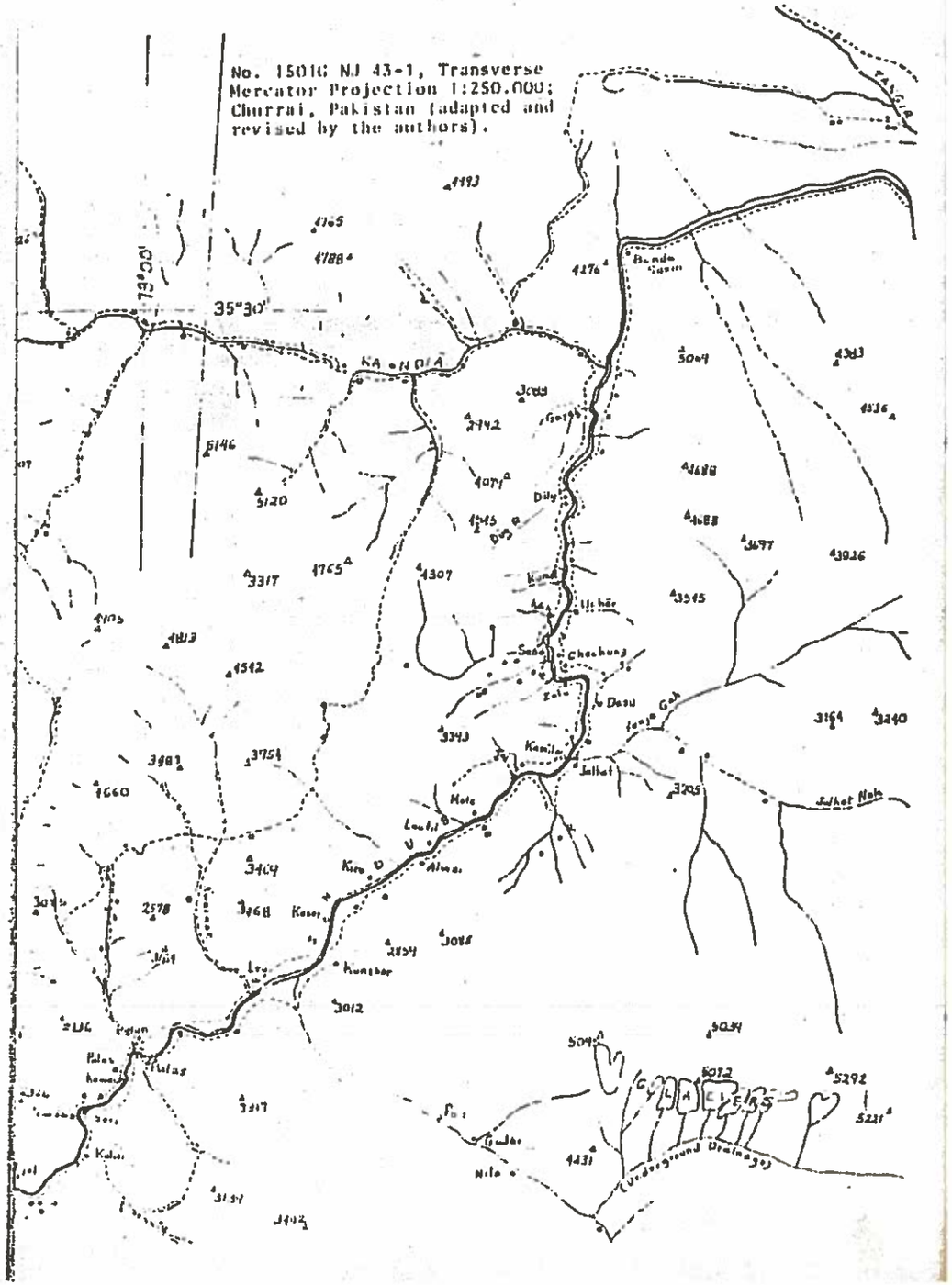
Relatively little is known about the dialect patterning of the region, and no complete description of any dialect

exists (to the knowledge of the authors). The inhabitants of Pālas and Jalkoṭ have their own linguistic "map" of the region and do not regard Kohistyō as a dialect of Shina (termed by them /ṣuṇ'kyo:/[8]), which in their view is not spoken to the south of Seō. They report, however, that they are able to understand the Gilgiti dialect of Shina.

A list of the places, dialects, and terms for inhabitants of the region from Jijal to the Shina-speaking area, as known to residents of Pālas and Jalkoṭ, is provided on the following page. For the convenience of the reader a map of the region is provided after page 158.

The Languages and Places Of Indus Kohistan: A Local Taxonomy[9)]

Place Name (Map)	Place Name (Local)	Language	Inhabitant
Jijāl	/ji'ja:l	jaja'li:	jaja'li:
Kolai	'kō:li	kolici'yo:	ko'lo:c
Pālas	'pa:las	kohis'tyō:	pal'so:c, kohis'tī:
Paṭan	'paṭan	paṭ'no:c	paṭ'no:c
Jalkoṭ	'jalko:ṭ	kohis'tyō:	jalko:'ṭi:, kohis'tī:
Seo	se'yo:	si'wo:c	si'wo:c
(above Seo)	ṣu'ṇa:eki	ṣuṇ'kyo:	ṣuṇ'ko:c/



In view of the universal appreciation of the Dardic languages generally as archaic with respect to phonological, morphological and lexical criteria, and of their historical interest in general, the absence of modern descriptions of any of the Kohistani dialects is to be regretted - the more so since construction of the Karakoram Highway may be expected to introduce many changes, including linguistic ones, within the next decade.

For this reason, a phonological analysis of the Kohistyō dialect spoken in Pālas (and with some variations, in Jalkot as well), is presented here. It is based solely on the idiolect spoken by Mr. ZARIN; I was not able to travel to Pālas or to record the speech of other speakers. However, the duration of the study - five and a half years - made it possible for the authors to revise and cross-check the linguistic material with a thoroughness which is scarcely ever feasible under normal field work conditions. It is hoped that any deficiencies of scope and variety, in this study, will be compensated by this regard for meticulous verification of the data. Our ultimate objective is to develop a phonemic script and full grammar of the dialect, which may be used as a basis for conducting linguistic research in neighboring dialects, and also as a means of recording the oral traditions of this historically important region.

II. Phonology

The phonology of Kohistyō is substantially the same as that described by GRAHAME BAILEY for Shina dialects in general. On the whole, it presents a picture of a fairly archaic Indo-Aryan dialect, with preservation of contrasts between dental and retracted, aspirated and unaspirated, consonants;

plus a full complement of palato-alveolar and retracted fricatives, both voiced and voiceless.

An interesting feature of this dialect is the existence of a four-way contrast in pitch tone. Pitch tones are not unknown in the region; a two-way contrast is described by GRAHAME BAILEY as occurring in Gilgiti Shina[10], and is also mentioned by MORGENSTIERNE as occurring in Bashkarik, Pashai and Khowar[11]. The tone contrasts are discussed at length in Section III, pages 169-174.

A striking degree of free variation among allophones of vowels, particularly the vowel /a/, characterizes this dialect. GRAHAME BAILEY calls attention to a similar situation in Gilgiti Shina[12]. An explanation of this phenomenon must await a more complete study of the dialect, based on recordings of the speech of both male and female speakers of different ages. Meanwhile, it may be pointed out that the sociological characteristics of the society (BARTH 1956) - seasonal migration, widespread illiteracy, and segregation of the sexes - would tend to discourage a standardized pronunciation. The phonemic analysis presented here describes the pronunciation of a single speaker, Mr. ZARIN. Expansion of the data to include the idiolects of other speakers might require its revision, though hopefully only in minor respects. Of more importance, in the writer's opinion, is the development of a prototype phonemic script which may be used to record grammatical, syntactic and lexical data, as well as oral traditions such as stories, songs and proverbs.

The taxonomic phonemes of Mr. ZARIN's speech are given below, followed by their phonetic realizations. Consonants enclosed in parentheses occur only in loan words from neighboring languages (Pashto, Punjabi, and Urdu).

Vowels

	Front	Central	Back
High	/i		u
Mid	e		o
Low	æ	a/	

Diphthongal Glides

/y w/

Consonants

	Labial	Dental	Alveolar & Palato-alv.	Retracted	Velar & Post-velar	Glottal
Stops	/p b	t d		ʈ ɖ	k g (q)	
Fricatives		(f)	s š z	ʂ ʐ	(x ġ)	h
Affricates		(ʦ)	c j	ç		
Nasals	m	n		ɳ	ŋ	
Laterals		l	r	ɽ/		

Aspiration

/h/, occurs with /b[13] t d ʈ k c ç l/

Suprasegmentals

/'/ stress[14]

/:/ Vowel length, occurs with all vowels

/ ̃/ Nasalization, occurs with all vowels except /æ/

/ˊ/ Rising tone, occurs with /i i: e a: u:/[15]

/ˋ/ Falling tone, occurs with /i i: e: a a: u: o o:/

/ˆ/ Falling tone with rising onset, occurs with /i: ĩ: e a: ã: u: o:/

/#/ Word juncture, indicated in texts by a space

Phonetic Realization, Distribution and Allophonic Variation

Vowels

/i/, High front vowel

= [ɪ] in the environment CiC, except where the final consonant is a nasal[16]: ['dɪlũ], 'bark (of tree)'; [ʦe'rɪʂ], 'root'; ['ʒɪp], 'tongue'[17]

= [ĭ] (very short) in final unstressed position -Ci: ['ã:ʧʐĭ] , 'mouth'; ['dodĭ], 'teeth'

= [i̥] (devoiced) in the environments -si, -ši, -ʐi :[18] ['scsi̥], 'he (agent case)'; ['pɯʃi̥], 'cat (f.)'; ['gõ:ʐi̥], 'houses'; ['lhã:ʂi̥], 'broom'

= [i] elsewhere: ['bi·], 'seed'; [ʊkə'nĩ:], 'nineteen'; ['li:ʂg], 'louse (small)'; ['ming], 'bird'

/e/, Mid front vowel

= [ɛ] in the environment (C)eC: ['ʐɛk], 'lying down'; ['bɛs], 'we (erg.)'; [ɛkh'lo:n][19], 'to bring out'; ['ɛk], 'one'

= [ɛ] in the environment eN (preceding a nasal): [hʌr'ɨɛm], 'I cause someone to take'; [bi'ɨɛm], 'I should sit'

= [ɨ] in the environment (C)VeC: ['ã:ʧʐĭ], 'mouth'; [pʌ'ʂhã:ɻlĭ], 'feather'

= [e] elsewhere: ['be], 'we (nom.)'; ['nẽ:], 'not'; ['ʧei:], 'woman'; [pʌn·'zʌle:], 'fifteen'; [ʌ'kã:e], 'eleven'

/æ/, Low front vowel

= [æ] in all positions: [ru:'pæ:], 'money'; [sæ'nə̃], 'they'; [qæ:'mʌt], 'price'

/a/, Low central vowel

= [ʌ] in the environment (C)aC:[20] ['zʌmg̊], 'all'; [pʌn·'zʌle:], 'fifteen'; ['hʌt], 'hand'; ['dʌn], '(they) give'; [ʌ'kã:e], 'eleven'

(Vowels)

- = [ʌ] in the environment CaV: ['nʌ̄ō], 'nine'
- = [ɑ] ~ [a] before /e/: ['dɑ̄·e] ~ ['dā·e], 'heard'
- = [ɡ] ~ [ō] in final unstressed position -Ca: ['bʌṭɡ] ~ ['bʌṭō], 'stone'; ['buṭō], 'all'; ['li:ç̣ɡ], 'louse (small)'
- = [ɡ] in -a:Cɡ (assimilated to a back vowel in the following syllable): ['kɡ̣:ṭhɡ̣], 'wood (sg.)'[21]
- = [ɑ] elsewhere: ['ɑ:e], 'this'; ['ç̣ɑ̄:r], 'four'; ['ṣ̣ɑ·], 'six'

/u/, High back vowel

- = [ʊ] in the environment (C)uC: ['tʊs], 'you (erg.)'; ['ç̣hʊb̥ū], 'fish'; [ʊz'mʊke:], 'earth'; ['sʊm], 'earth, mud'
- = [ū] in final unstressed position -Cu: ['ṣ̣ɪgū], 'long'; ['khuṭū], 'small'
- = [u̥] in the environments -ṣu, -ʐu: ['puṣu̥], 'cat (m.)'; ['mū:ʐu̥], 'mouse'
- = [ɯ] (unrounded high back vowel) in the environments -uCi, -uCĭ: ['pɯsi̥], 'cat (f.)'; ['nɯthĭ], 'nose'[22]
- = [u] elsewhere: ['du:], 'two'; [tu], 'you (nom. sg.)'; ['nu:m], 'name'

/o/, Mid back vowel

- = [o̥] in the environments oN, No, ō (short /o/ is slightly lowered preceding or following a nasal, or occurring with nasalization): ['ç̣o̥m], 'skin'; ['po̥n], 'path'; ['ko̥n], 'ear'; ['mō̥], 'I (nom.)'
- = [o̥] ~ [ō] in final unstressed position -Cu: ['mɑ:ṭo̥], 'father'; ['ʐu:ko̥], 'sun'; ['tɑ̄:rō], 'star'
- = [o] elsewhere: ['ṣo:], 'what?'; ['gɑ:o], 'cow'; ['poṣ], 'five'; ['kho:n], 'to eat'

Diphthongal Glides

/y/, High front vowel glide[23]

- = [i̯] in all environments: ['jū:n], 'moon'; [mɪr'i̯o:n], 'to die'; [ɑ:'i̯o:n], 'to come'; [bi'i̯o:n], 'to sit'

/w/, Mid to low back vowel glide

- = [u̯] before /i/: ['u̯i:], 'water'; [kʊ'ku̯ĭ:], 'hen'; ['bu̯i:], 'they will be (present)'; [bʌr'u̯i:], 'they will carry'
- = [o̯] before /e/: ['ko̯e:], 'who?'
- = [v] (lenis labio-dental fricative)[24]: [sɪ'vo:ç̣], 'inhabitant of Seo'; [vʌ'zi:r], 'wazeer'; ['vɑ̄:lv], 'summer'.

Consonants

/p/, Voiceless bilabial stop

- = [p] in all environments: ['poṣ], 'five'; [ç̣ʌp'tʌrĭ], 'flat'; [ç̣ʌ'po:n], 'to bite'; ['ʐɪp], 'tongue'

/b/, Voiced bilabial stop

- = [b̥] (very lenis) ~ [β] (bilabial fricative) intervocalically: ['ç̣hʊb̥ū], 'fish'; [bʊ'b̥ɑ:] ~ [bʊ'βɑ:], 'father'
- = [b] elsewhere: ['bʌṭō], 'big'; ['i̯ʌb], 'canal'

/t/, Voiceless dental stop

- = [t] in all environments: ['tu], 'you (nom.)'; ['mʊtū], 'other'; ['sʌt], 'seven'

/d/, Voiced dental stop

- = [d] in all environments: ['du:], 'two'; ['dodĭ], 'teeth'; ['mʌ̣d], 'churning (buttermilk)'[25]

(Consonants)

/ṭ/, Voiceless retracted stop
= [ʈ] finally and after /ʂ/: ['ko:ʈ], 'village'; [ʌʂ'ʈɑ̃:ẽ:], 'eighteen'[26]
= [t̲] elsewhere: ['t̲e:rg̲], 'throat'; ['buṭ̲õ], 'all'; ['muṭ̲hũ], 'tree'[27]

/ḍ/, Voiced retracted stop
= [ɖ] in all environments: ['ɖe:r], 'stomach'; [ɖr'ɖu:rg̲], 'round'[28]

/k/, Voiceless velar stop
= [k] in all environments: ['kg̲e:], 'who?'; [ʌ'kɑ̃:e], 'eleven'; ['ɛk], 'one'

/g/, Voiced velar stop
= [g] in all environments: ['gu:o], 'cow'; [hʌ'gã:r], 'fire'[29]

/q/, Voiceless postvelar stop (in loanwords)
= [q] ~ [k]: [fʌ'qi:r] ~ [fʌ'ki:r], 'beggar'

/f/, Voiceless labiodental fricative
= [f] ~ [p]: [ʌ'fo] ~ [ʌ'po], 'a little (more)'[30]; [fʌ'qi:r], 'beggar'

/s/, Voiceless alveolar fricative
= [s] in all environments: ['sɪs], 'he/she (erg.)'; ['sɛse], 'his'; [ʌs'mɑ:n], 'sky'

/š/, Voiceless palato-alveolar fricative
= [š] in all environments: ['šõ:], 'white'; [mʊ'šã:], 'man'; ['poš], 'five'; ['ʌšpo:], 'horse'

/z/, Voiced alveolar fricative
= [z] in all environments: [pʌn·'zʌle:], 'fifteen'; [ʊz'mʊke:], 'earth'; [rʌ'zo:n], 'to say'

(Consonants)

/ʂ/; Voiceless retracted fricative
= [ʂ] in all environments: ['ʂɪʂ̃], 'head'; ['mɪʂ̃thũ], 'good'; ['lhɑ́:ʂ̃i], 'broom'

/ʐ/, Voiced retracted fricative
= [ʐ̃] in all environments: ['ʐ̃ɑ̃:], 'brother'; ['ʌʐ̃ũ], 'rain'[31]

/x/, Voiceless velar fricative (in loan words)
= [x]: ['xɑ̃:r], 'city'

/ɣ/, Voiced velar fricative (in loan words)
= [ɣ]: [ɣʌ'ri:b], 'poor'

/h/, Voiceless glottal fricative
= aspirated release in the position Ch: ['khuṭ̲ũ], 'small'; ['muṭ̲hũ], 'tree'; [pʌ'ʧ̲hɑ̃:ʈ̲lĩ], 'feather'
= [h] elsewhere: [hʌ'gã:r], 'fire'; [ʧʌ'hũde:], 'fourteen'

/ʦ/, Voiceless dental affricate (in loan words)
= [ʦ]: [ʦʌ'pli:], 'sandal'[32]

/c/, Voiceless palato-alveolar affricate
= [ʧ] in all environments: [ʧʌ'hũde:], 'fourteen'; ['ʧei:], 'woman'; ['poʧ̲o], 'garment, cloth'

/j/, Voiced palato-alveolar affricate
= [j] varying freely with [ž]: ['jʌk] ~ ['žʌk], 'person'; ['bojɪmʌs] ~ ['božɪmʌs], '(I) go'

/ç/, Voiceless retracted affricate
= [ʧ̲] in all environments: ['ʧ̲e:], 'three'; [ʌ'ʧ̲hi:], 'eye'; ['li:ʧ̲o], 'louse (small)'; ['kʌʧ̲], 'fodder, grass'

(Consonants)

/m/, Voiced bilabial nasal
= [m] in all environments: ['miŋg], 'bird'; [lɑ·'muṭĭ], 'tail'; ['du:m], 'smoke'

/n/, Voiced dental nasal
= [n] in all environments: ['nʌõ], 'nine'; [mʌ'nũ:ẓ̪], 'person'; [ḍʌ'gʌn], '(they) beat'

/ṇ/, Voiced retracted nasal (medial and final positions only)
= [ɳ]: ['lu:ɳĭ], 'salt'; ['kɵɳ], 'ear'; [hɑ·'ɳo], 'egg'

/ŋ/, Voiced velar nasal
= [ŋ]: ['miŋg], 'bird'

/l/, Alveolar lateral
= [l] (dental) intervocalically: ['dɪlũ], 'bark (of tree)'; [pʌ'ĉhâ:l̪ĭ], 'feather'
= [l̲] (alveolar) elsewhere: [l̲ɑ·'muṭĭ], 'tail'; ['l̲ɛ:l̲], 'blood'

/r/, Voiced alveolar tap
= [r] in all environments: [rʌ'ɔ:n], 'to say'; [ĉc'rɪʂ̪], 'root'; ['nu:rᵩ], 'fingernail'

/ṛ/, Voiced retracted flap
= [ɽ]: ['bʌɽᵩ], 'big'; ['dʌɽ], 'pain'[33]

Suprasegmental Features

With the exception of tone, the suprasegmental features do not require extensive comment. The tone contrasts will be considered separately in Section III.

Stress

As mentioned in footnote 14, stress co-occurs with length in the majority of cases. However, final short stressed vowels must be distinguished from final short unstressed vowels, since only the latter become devoiced. Compare the following sets:

['muli̯ĭ], 'buy (verb stem)'
[mu'li], 'radish'

['puʂ̪i̯], 'eat (f.)'
[pu'ʂi], 'goatskin bag'

['jʌɪᵩ], 'old'
[jʌ'ro], 'male friend of girl (seducer)'
[jʌ'ro:], 'orphan'

Since stress is always the predictive feature in these contrasts[34], and since stress/length co-occurrence is not universal, stress has been given phonemic status. (In the phonemic transcriptions presented in this paper, stress is marked only in polysyllabic syllables, since all monosyllables receive stress.)

Length

Pairs such as:

['dɵn], 'tooth'
['do:n], 'to give'

and:

[jʌ'ro], 'seducer'
[jʌ'ro:], 'orphan'

attest to a two-way contrast in vowel length. However, the features of stress, length and tone interact within the boundaries of the syllable, resulting in a partial neutralization of the two-way length contrast under the following conditions:

A) short vowels occurring with stress or tone are lengthened:

['dâ·e] = /'dâe/, 'beard'
['kô·ṭ] = /'kôṭ/, 'coat'
['ṣa·] = /'ṣa/, 'six'

B) long vowels occurring without stress or tone may be shortened[35]:

[ha·'ṇo] ~ [hʌ'ṇo] = /ha'ṇo ~ ha:'ṇo/
[la·'muṭī] ~ [la:'muṭī] = /la:'muṭi/, 'tail'
[di·'jâ:r] = /di:'jâ:r/, 'daughters'

Since stress usually co-occurs with length, this type of variation is infrequent.

III. Tone Contrasts

A two-way tone contrast was identified by GRAHAME BAILEY for the Gilgitī dialect of Shina:

> For short we may call it a low tone, but as it rises from the low position, it is more accurately called a low rising tone. The pitch of a syllable pronounced with this tone is about four semitones above the lowest note that a speaker can reach, and it rises about two semitones, i.e. to a note about six semitones above the speaker's lowest note.

He describes it as less emphatic than the low rising tone in Punjabi, notes that any accented syllable may receive it, and lists six minimal pairs[36]. He goes on to comment:

> The phenomenon is extremely puzzling. I find myself unable to make out what the tone is due to. It does not appear to owe its origin to any mere collocation of letters, for the same letters sometimes occur without it....Again, it is not confined to Sanskritic words on the one hand or non-Sanskritic on the other. Words taken over from Urdu sometimes have it; indeed Ṣīṇs speaking Urdu give the tone to some words. In Panjabi the matter is not so difficult. Words which in Sanskritic or other languages have an aspirate (other than an aspirated surd) before an accented vowel, receive when incorporated into Panjabi, the low-rising tone; when such an aspirate follows an accented syllable, it has the high-falling tone. A combination of these features results in the compound tone, and the absence of both leads to a level normal tone. Now all this is quite different from Shina[37].

The phonetic data show three contour tones in Kohistyō: falling [ˋ], rising [ˊ], and rising-falling [ˆ]. Five minimal pairs are presented here for illustrative purposes:

['čâ:r], 'four'
['ča:r], 'suitable'

[di·'jâ:r], 'daughters'
[di·'ja:r], 'wash it'

[ʂʌ'hû:], 'cold (adj. m.)'
[ʂʌ'hū:], 'cold weather'

['bí·], 'seed'
['bì·], 'twenty'

['bâ:k], 'abuse'
['ba:k], '(a) push (n.)'

All three tones occur both in word lists and connected discourse. [ˋ]is similar phonetically to [ˆ], and there is some alternation between the two. There are also no minimal pairs contrasting [ˋ] and [ˆ]. However, the authors have not been able to discover any distributional criteria for classifying [ˆ] as an allotone of [ˋ], and the diachronic evidence[38] points to a system which is undergoing rapid evolution by a process of tonal split, or the multiplication of tonal contrasts. For these reasons, all three tones have been accorded phonemic status: /ˋ/, /ˊ/, and /ˆ/. This does not imply that all the tonemes are of equal antiquity.

In order to verify the classification of the tonemes as lexical and not merely intonational in nature, a test was devised in which three tone-bearing words were subjected to various types of syntactic manipulation. The results, as summarized below, show that lexical tone occurs in two of them. This is not to say that no variation in the phonological shape of the tone occurs, but that the tonal opposition is consistently maintained.

1. /a'kā:e/, 'eleven'

/'á:e 'ḍò:lei kaç a'kā:e 'go:ji khi'è:ga.
ka'cā: 'go:ji khi'è:gǽ?
a'kā:e. (rises slightly and falls)
a'kā:e? (starts from higher pitch and falls farther)
'á:e 'likhya 'ḍò:lei kaç a'kā:e 'go:ji khi'è:gǽ?/

'Eleven cows ate the fodder of this field.
How many cows ate it?
Eleven.
Eleven?! So many cows ate the fodder of such a small field?'

The pitch range of /ˆ/ in /a'kā:e/ varies (in other sequences, as described below, /ˆ/ may even alternate with /ˋ/), but the tone does not drop out. In contrast to this situation, /pa:ra:e/[39] shows intonational tone:

2. /'pa:ra:e/, 'that'; /du'kā:n/, 'shop'

/'pa:rà:e mi du'kā:nun. 'That's my shop.
pa:'rà:e du'kā:n? That shop?
'pa:ra:e du'kā:n mi:n!/ That shop is mine!'

Compare:
/'pà:rà:e mi du'kā:nun./ 'The shop over there is mine.'

Whereas there is no variation in the tone in /du'kā:n/, /'pa:ra:e/ shows no fewer than four possible combinations of tone and stress, and in one environment both tones are lost[40].

Variation in the phonological shape of lexical tones, or alternation between them, does occur, but is phonologically determined. When two tone-bearing words occur in sequence, the following rules apply:

A) the tone in the first word does not change;
B) a /ˆ/ in the second word becomes /ˋ/;
C) a /ˋ/ in the second word becomes [_] (creakiness);
D) a /ˇ/ in the second word becomes /Ø/ (level tone).

Examples

/a'kā:e pa'çhā:eli/ → /a'kā:e pa'çhà:eli/, 'eleven feathers'
/a'kā:e bĭ 'kula/ → [ʌ'kā:e 'bi- 'kvlă], 'eleven (grains of) seed'
/a'kā:e lhā:şi/ → /a'kā:e lha:şi/, 'eleven brooms'

All these changes may be considered as types of tone sandhi, and they all have one feature in common: the second tone is reduced to a phonetically less complex unit. The rising-falling tone /ˆ/ is reduced to a simple falling tone /ˋ/; the falling tone /ˋ/ is reduced to creakiness, which is simply a low pitched level sound; and the rising tone /ˇ/ is reduced to level tone[41].

Certain types of alternation between /ˋ/ and /ˆ/, /ˇ/ and /ˆ/ appear to have a morphological function, as illustrated by the following sets:

/ça'hù:/, 'cold (adj., m.)'
/ça'hū:/, 'cold weather'
/ça'hwĭ:/, 'cold (adj., f.)'

/ku'kŭ:/, 'rooster'
/ku'kwĭ:/, 'chickens'
/ku'kwĭ:/, 'hen'

Both morphological and phonological criteria may be involved. Tone-bearing polysyllabic words of the type /ça'hwī:/, /ku'kwī:/, with stress on the last or penultimate syllable, occur with /ˆ/, regardless of whether the stem from which they are derived bears /ˋ/ or /ˊ/. Most tone-bearing bisyllabic words with stress on the second syllable also occur with /ˆ/. But the majority of monosyllabic words, as well as bisyllabic words with stress on the first syllable, occur with /ˋ/. These distributional patterns are however not complementary, as shown by items like /bā:k/, 'abuse'; /'ō:ši/, 'wind'[42].

The foregoing is not intended as an exhaustive treatment of allotonic variation in Kohistyō, but merely to demonstrate that the occurrence of certain tones may be considered part of the basic "equipment" of some lexical items. A complete description of the Kohistyō tonal system probably is not possible at the present synchronic stage of the language's development. The entire system appears to be in a state of flux. The earliest data, collected by GRAHAME BAILEY for related dialects in the early 1920's, attests to no more than a two-way contrast (between level tone and one described by him as "low rising"). Our own earliest data, collected in winter 1975, shows a clear contrast only between the falling tone /ˋ/ and a level tone; the rising tone /ˊ/ was isolated during further analysis in 1978. That it was not discovered sooner may be due to its low frequency of occurrence. The rising-falling tone /ˆ/, which is similar phonetically to /ˋ/, did not emerge from investigation until 1979. The data currently at hand suggest that it is rapidly gaining in functional importance.

A preliminary reconstruction of the origin of the tonal system may be contemplated, provided sufficient comparative

data for the other, related Dardic languages is obtainable. A reconstruction of the initial consonant system for Dardic, as well as for proto-Dardic consonant clusters would provide clues to the origin of the tonogenetic process[43]. Likewise, the occurrence of tones in related languages such as Gilgitī Shina and Khowar deserves further examination.

Finally, the geographic status of word tone in the languages of the Indus drainage region as a whole needs to be considered without regard to the genetic affiliation of the languages, in the light of the hypothesis, advanced by MATISOFF, that tonal systems may be acquired through a process of geographical diffusion[44]. It may well be that languages can "borrow" tonal systems, as well as acquiring them through processes of phonological decay and consonantal mutation. An explanation of this sort would help to account for the occurrence of tones in words that have been borrowed into Kohistyō, such as /xā:r/, 'city (Pashto)', /du'kâ:n/, 'shop (Pashto, Punjabi etc.)' and /kôṭ/, 'coat (English)'. These tones cannot be explained by recourse to historical reconstruction (loss of consonant clusters, loss of voicing, etc.). It looks rather more like tones can "become fashionable"; that once they have arisen their use becomes desirable for nonlinguistic as well as linguistic reasons (sounding "nice" or "soft"), and that their occurrence is exploited even in environments where they are not essential for contrastive purposes.

List of Lexical Items Occurring With Tones[45]

/ˆ/ Falling Tone	/ˇ/ Rising Tone	/ˆˇ/ Falling Tone With Rising Onset
cə̂:r, 'four'	'lhî:li, 'red (f.)'	ma'nū:ʐu, 'person'
'nâō, 'nine'	'lhî:lu, 'red (m.)'	ha'gā:r, 'fire'
bî, 'seed'	'bǐ, 'twenty'	a'kā:e, 'eleven'
'thî:noe, 'you do'	ju'mǎ:t, 'mosque'	bâ:l, 'hair'
'mû:ʐu, 'mouse'	'lhǎ:ʂi, 'broom'	mu'šā:, 'man'
'bə̂:e, 'twelve'	ku'kŭ:, 'rooster'	du'kā:n, 'shop'
'ʂô:e, 'thirteen'	a'ĭ:t, 'having come'	yū:n, 'moon'
'sû:ri, 'sun'	bi'yém, 'should I sit?'	'ō:šĭ, 'wind'
di:'jə̂:r, 'daughters'		sat'tə̃:ẽ, 'seventeen'
kə̀ʈ, 'coat'		aʂ'ʈə̃:ẽ:, 'eighteen'
'dâe, 'heard'[46]		'rā:eti, 'night'
'dàe, 'gave'		šō:, 'white'
hyû:, 'heart'		ʐâ, 'brother'
'tə̂:ro, 'star'		xâ:r, 'city'
wî:, 'water'		çəh'wĭ̃:, 'cold (f.)'
'ə̀:ēzi, 'mouth'		ku'kwĭ̃, 'hen'
'nî:lo, 'green'		pa'çhā:eli, 'feather'
'pî:lo, 'yellow'		thi'yâ:tan, 'you (honorific) do'
ça'hŭ̀:, 'cold (m.)'		'ʂõ̃:ẽ: 'sixteen'
nõ̀:, 'new'		'aĭ:, 'goat'
gô:ʂ, 'house'		bā:k, 'abuse'
'gô:ʐi, 'houses'		ʐēk, 'lying down'
lē:l, 'visible'		
'ɖô:li, 'field'		

Lexico - Statistical List[47]

English	Kohistyō: (phonetic)	Kohistyō: (phonemic)
I	['mə̃	/mō
thou	'tu	tu
we	'be	be
this	'á:e ∿ 'a:e	'a:e[48]
that	'pa:rà:e ∿ pâ:'rá:e	'pa:ra:e
who?	'kọe:	kwe:
what?	'žo:	jo
not	'nē:	nē:
all (Urdu sab)	'žʌmə̌	'jama
all (U. sa:ra:)	'bʊʈə̃	'buʈa
many	'lo 'žo	lo jo
one	'ɛk	ek
two	'du:	du:
three	'ç̌e:	çe:
four	'čə̀:r	cə̂:r
five	'pož	pož
six	'ʂa·	ʂa
seven	'sʌt ∿ 'sʌttə	sat ∿ 'satta
eight	'ā:ʂ	ā:ʂ
nine	'nʌ̀ō	'nâō
ten	'da·e	'dae
eleven	ʌ'kə̂:e	a'kā:e
twelve	'bə̀:e	'bə̂:e
thirteen	'ʂô:e	'ʂô:e
fourteen	čʌ'hūde:	ca'hūde:
fifteen	pʌn·'zʌle:	pan'zale:
sixteen	'ʂə̃õ̃:ẽ:	'ʂõ̃:ẽ:
seventeen	sʌt'tə̃:ẽ:	snt'tũ̃:ẽ:
eighteen	ʌʂ'ʈə̃:ẽ:	aʂ'ʈə̃:ẽ:

nineteen	ʊkə̆'nī:	uka'nī:
twenty	bī·	bī
twenty-nine	bhi'o: 'nə̃õ	bhi'o: 'nə̃õ
big	'bʌṭŏ	'baṭo
long	'ẓɪgŭ	'ẓigu
small	'khʊṭŭ	'khuṭu
woman	'čei:	'cei:
man	mʊ'šə̃:	mu'šə̃:
person	mʌ'nū:ẓu̯	ma'nū:ẓu
fish	'čhʊḇŭ	'chubu
bird	'miṇ ~ 'ming	miṇ ~ miṇg
dog	'šū:	šū:
louse (big)	'ẓū:	jū:
louse (small)	'li:ɕg	'li:ɕa
tree	'mʊṭhŭ	'muṭhu
seed	'bī·	bī
leaf	'pʌṭhŭ	'paṭhu
root	čɛ'rɪṣ	ce'riṣ
bark (of tree)	'dɪlŭ	'dilu
flesh (of living creature)	'mọ:s	mo:s
blood	'lɛl	lel
skin	'čɔm ~ 'čọm	com
bone	'ə̄:ɛ̄ṭhī	'ə̄:ēṭhi
grease	'miū:	myū:
egg	hɯ·'ṇọ ~ hʌ'ṇọ	ha:'ṇo, ha'ṇo
horn (of animal)	'ṣ̌ɪgŭ	'ṣigu
tail	lɯ·'mʊṭī	la:'muṭi
feather	pʌ'ɕhū:ɛ̨lī	pa'ɕhū:ɛli
hair	'ṣɪṣ, 'jɯ:kọe:	ṣiṣ, 'ja:kwe:
head	'ṣ̌ɪṣ	ṣiṣ
ear	'kọṇ	koṇ
eye	ʌ'ɕhi:	a'ɕhi:

nose	'nʊthĭ	'nuthi
mouth	'ə̄:ɛ̄zĭ	'ə̄:ēzi
tooth	'dọn	don
tongue	'žɪp	jip
fingernail	'nu:rọ̃ ~ 'nu:rə̃	'nu:ra
foot	'pə̀:	pə̀:
knee	'kʊṭhọ̃	'kuṭho
hand	'hʌt	hat
belly	ḍe:r	ḍe:r
neck	ṣʌk	ṣak
breasts	'hi̯ū:	hyū:
heart	'hi̯ū:	hyū:
liver	hʌl'li:	hal'li:
drink	pi'i̯o:n	pi'yo:n
eat	'kho:n	kho:n
bite	čʌ'po:n	ca'po:n
see[49]	ɕʌ'ko:n	ɕa'ko:n
hear	ṣʊ'ṇo:n	ṣu'ṇo:n
know	lʌ'ɕho:n	la'ɕho:n
sleep	'ni:ṣ 'ṭho:n	ni:ṣ ṭho:n
die	mɪr'i̯o:n ~ mɪrī'i̯o:n	mir'yo:n ~ miri'yo:n
kill	mʌ'ro:n	ma'ro:n
swim	tʌ'ro:n	ta'ro:n
fly	'thor 'do:n	thor do:n
walk	i̯ɯ:'zo:n	ya:'zo:n
come	ɯ:'i̯o:n	a:'yo:n
lie	'ɛ̨ĕk 'ho:n	ɛ̨ēk ho:n
stand	'čokọ̃ 'ho:n, čok'i̯o:n	'coko ho:n, cok'yo:n
sit	hi'i̯o:n	hi'yo:n
give	'do:n	do:n
say (kaɪna:)	rʌ'zo:n	ra'zo:n
say (bata:na:)	pʌš'i̯o:n	paš'yo:n[50]
sun	'ju:kọ̃, 'sū:ri	'ju:ko, sū:ri

moon	'jū:n	yū:n
star	'tə̂:rō	'tə̂:ro
water	'ụ̄:ɪ	wɪ:
rain	'ʌẓ̆ū	'aẓu
stone	'hʌɪg ∿ 'bʌṭə̆	'baṭa
sand	'sɪgʌl	'signl
earth	uz'muke:	uz'muke:
cloud	'ʌẓ̆ū	'nẓu
smoke	'du:m	du:m
fire	hʌ'gā:r	ha'gā:r
ash	'šō:	šō:
burn (jalna:)	dʌ'žo:n	da'jo:n
burn (jala:na:)	dʌ'ho:n	da'ho:n
path	'pọn	pon
mountain	'khọn	khoṇ
red	'lhī:lū ∿ 'lhī:lo̱	'lhī:lu ∿ 'lhī:lo
green	'nī:lg	'nī:lo
yellow	'pī:lo̱	'pī:lo
white	'šō:	šō:
black	'kɪṇg	'kiṇo
night	'rā:gtĭ	'rū:eti
hot	'tʌtọ	'tato
cold	ç̣ʌ'hŭ:	ça'hŭ:
full	'pu:ṇg	'pu:ṇo
new	'nō:	nō:
good	'mɪṣṭhū, 'sʌm	'miṣṭhu, sam
round	ḍɪ'ḍu:rg	ḍi'ḍu:ro
dry	'šukho̱	'šukho
name	'nu:m]	nu:m/

Bibliography

1. BARTH, Fredrik. Indus and Swat Kohistan: An Ethnographic Survey. Studies Honoring The Centennial of Universitetets Etnografiske Museum, Oslo. Vol. II. Oslo: 1956.
2. BIDDULPH, J. Tribes of The Hindoo Koosh. Government Printer, Calcutta 1880. Reprinted by Indus Publications, Karachi, 1977.
3. GRAHAME BAILEY, T. Grammar of the Shina Language. London: Royal Asiatic Society, 1924.
4. MATISOFF, James. Tonogenesis in Southeast Asia. Berkeley: University of California (mimeograph), May 1973.
5. MORGENSTIERNE, Georg. Report on a Linguistic Mission to North-Western India. ISK, Serie C III-1; Produced by Muzhar Yusuf for Indus Publication, Karachi. [Originally published 1932.]

Notes:

1) GRAHAME BAILEY, 1924, pp. xiii to xiv. He describes the Indus Valley from Chilas to Binkoṭ as Shina-speaking (including all the area shown on the map after p. 158 of this paper - Binkoṭ would be three marches south of the village of Kolai). He mentions only two dialects of Shina spoken in this area, Chilasi and Kohistani; and presents a brief grammar and vocabulary of the Kohistani dialect.
2) BARTH 1956, p. 11.
3) BIDDULPH 1880, p. 2.
4) BARTH 1956, p. 27.
5) BARTH 1956, pp. 20-1.
6) Personal observation by the authors. The unfortunate couple may even be pursued to their new location by selfappointed vigilantes and attacked, as happened in a case on record in Islamabad. BARTH 1956, pp. 44-6 also describes these features of customary law.
7) In the case of a murder, however, a person's qoum will protect him if it is able to do so.
8) As phonemically rendered in Pālas Kohistyō. The basis for the development of the phonemic script is presented in Section II, pp. 159-169.

9) All names within the slants are given in the phonemic script prepared for Kohistyō.

10) GRAHAME BAILEY 1924, pp. 4-5, 84-9: "For short we may call it a low tone but as it rises from the low position it is more accurately called a low rising tone." He contrasts this low rising tone with a level, or unmarked tone.

11) MORGENSTIERNE 1932, p. 29.

12) "It is therefore not easy to say exactly what is the pronunciation of any word, particularly as regards the vowels. Thus a vowel might quite correctly be written a, ă, a̤: or ä, ĕ, e̤: or ë, i, i: or ü, o, o̤: or a, ă: or ë, e, ĕ." GRAHAME BAILEY 1924, p. 1.

13) /bh/ is marginal and occurs in: /bhi'o: 'nãõ/, '29'; /bhũ:k/, 'bull'; /bhñ:r/, 'feces'; /bhâ:r/, 'abroad'.

14) Stress co-occurs with length in most instances. There are important exceptions, however: ['nãõ:], 'nine'; [hə·'po], 'egg'; ['jʌlko:ʈ], 'Jalkoṭ'; ['ʌšpo:], 'horse'. This plus other considerations necessitates a distinction between stressed and unstressed syllables. See pp. 167-168.

15) Data on the distribution of tones is not yet complete. See Section III, pp. 169-174.

16) The term "environment" refers to both stressed and unstressed syllables unless otherwise specified.

17) The system of phonetic transcription used here is, with slight adaptations, that of the International Phonetic Association. Adaptations are usually consistent with current American usage and in some cases have been chosen to facilitate a typewritten presentation.
The following symbols may require identification:
[ɪ] high front unrounded lax vowel (IPA ɪ)
[ʊ] high back rounded lax vowel (IPA ʊ)
[ʈ], [ɖ] etc.: retracted consonants
[ɣ] voiced velar fricative (IPA ɣ)
[š] alveolar slit fricative (IPA ʃ)
[č] unvoiced alveolar affricate (IPA ʧ)
[j] voiced alveolar affricate (IPA ʤ)
Diacritic symbols:
C̲ (where C̲ = any consonant): lenis consonant
V̥ (where V̥ = any vowel): voiceless vowel
V̆ very short vowel
V· half long vowel
V: long vowel

V̯ vowel glide
V̝ slightly lowered vowel
V̟ slightly backed vowel
Ṽ nasalized vowel

18) Compare the pattern for final short unstressed /-u/, which is identical. Unstressed /-a/ and /-o/ vary more or less freely: [a̤] ~ [ə̆], [o̤] ~ [ö]. See GRAHAME BAILEY 1924, pp. 6-7. An alternative approach to analyzing these sounds as vowels would be treatment of them as co-articulated consonants (labialized, palatalized etc.). This approach has been rejected on two grounds: (a) devoicing is not total with all final short vowels, and (b) treatment of C̲ə̆, C̲ö and C̲u̇, C̲ü all as labialized consonants obscures a distinction, audible to Mr. ZARIN, between final short /-u/ and final short /-o/.

19) In the Jalkoṭi dialect, Pālas Kohistyō has [nɛkh'jo:n].

20) [ʌ] ~ [ʌ̟] ~ [a̤] on an idiolectal basis. Considerable variation between the speech of men and women in the pronunciation of this vowel is reported (ZARIN, personal communication), and awaits further investigation.

21) ['kə̂:ʈho], 'wood (sg.)' contrasts with ['kə̂:ʈh], 'wood (pl.)'. The assimilation of /-a-/ to /-o/ appears to reinforce this distinction, as the devoicing of final unstressed short vowels causes conditions of near-homophony. In the event of a diachronic loss of the final devoiced vowels, phonemic splits of the type /a/ → /a/, /ɔ/ might well be expected.
See also footnote 22 for a parallel type of assimilation.

22) ['pʊšu̯j], 'cat (f.)' contrasts with ['pʊšu̯], 'cat (m.)'. The incomplete assimilation of /-u-/ to /-i/ (by unrounding) reinforces this contrast under conditions of near-homophony.
GRAHAME BAILEY (1924, p. 120) describes "indeterminate vowels" in Kohistani Shina, i.e. "between ë and ö, ë and ü, i and o, o and u". Some of this variation may be explained in terms of the processes of assimilation described above.

23) The distinction between vowels and diphthongs in this presentation is designed primarily as a means of indicating syllable boundaries. For example, /'iũ:n/ (one syllable) and /a:'io:n/ (two syllables) can be transcribed without the use of the diphthong /y/. /bi'io:n/ (two syllables) is a less successful transcription, however, and transcriptions of words with [u̯] are misleading -

for example, /'bui:/ (one syllable, but it looks like two) and likewise /har'ui:/ (two syllables) cannot be transcribed without the diphthong /w/.

Syllabification of the above items is clearer with use of /y/ and /w/:

/yū:n/, 'moon'
/a:'yo:n/, 'to come'
/bi'yo:n/, 'to sit'
/bwi:/, 'they will be (present)'
/har'wi:/, 'they will carry'

The status of diphthongs deserves fuller treatment than is possible here. Given the complexity of length, stress and tone contrasts in Kohistyō (see pp.169-174), a study of the syllabic structure of the Kohistyō word is a theoretical problem in its own right.

24) Distinct only in point of articulation from one intervocalic allophone of /b/, [β] as in [bu'βa:]. One may possibly anticipate a future partial neutralization of /b/ and /w/ in some environments.

25) Only one example of /-d/ occurs: [ˈmə̆d]. The [ə̆] is a unique occurrence and suggests a proto-form [ˈmə̆dᵘ̯].

26) Certain kinds of morphophonemic alternation result in assimilation of dental and retracted stops. In [ˈcoṭ ˈḍo:n], 'to wound', from [ˈcoṭ], 'wound' and [ˈdo:n], 'give', both stops are alveolar.

27) The symbol [ṭ] is employed here to indicate an alveolar stop. The point of articulation is slightly to the back of English "t" and "d". However, except where morphophonemic assimilation is present, /ṭ/ and /ḍ/ are clearly distinct from /t/ and /d/. In the phonetic notation used throughout this paper, no attempt has been made to consistently distinguish between retracted consonants such as [ṭ], and alveolars such as [t] and [t̪].

28) No examples of final /-ḍ/ occur.

29) No examples of final /-g/ occur.

30) [ˈʌpᵘ̯] also occurs and means '(too) few'.

31) Final /-ṛ/ does not occur.

32) According to GRAHAME BAILEY (1924, p. 225), this sound occurs in Kohistani Shina: ṭso = 'you (pl.)'. This pronoun occurs in Kohistyō as ['so].

33) Does not occur initially.

34) Compare also the pair: [ʌ'po], 'a little (more)' and [ˈʌpᵘ̯], '(too) few', where stress is apparently exploited to distinguish between two items with a common etymological origin.

35) In cases where more than one predictive feature occurs simultaneously with the same segmental unit, the question invariably arises: which possesses primary significance? In this case, the data appear to support an analysis which gives precedence to stress and tone over the feature of length. However, I do not wish to imply that this is the only correct analysis. The interaction of suprasegmentals is one of the interesting and unresolved issues of Dardic linguistics.

36) GRAHAME BAILEY 1924, pp. 4-5. Most of the vocabulary items in his list occur in Kohistyō, as well, but they do not contrast for tone as they do in Gilgiti Shina.

37) GRAHAME BAILEY 1924, p. 84.

38) The longitudinal data, consisting of that published by GRAHAME BAILEY, plus the authors' data, is summarized on pp. 173-174.

39) /'pa:ra:e/ is cited in the lexicon as occurring without tones, because they are not lexically determined. In the corpus, however, this item usually occurs with at least one tone, /'pa:rā:e/ being the preponderant form.

40) Likewise /ka'ca:/, 'how many': /ka'ca: tā:ra/, 'how many stars' (but /ka'cā: 'go:ji/, 'how many cows').

41) A descriptive problem arises here, since it could be maintained that the opposition between marked and unmarked segments is no longer maintained. However, the partial neutralization of a phonemic contrast is a common enough phenomenon. Compare the partial neutralization of the length contrast, pp. 168-169.

42) A list of tone-bearing items is provided on p. 175.

43) I am indebted to Dr. James MATISOFF for introducing me to the concept of tonogenesis, and also for providing numerous useful comments and suggestions. Thanks are also due to Professor Georg BUDDRUSS, Professor Hermann BERGER, and Dr. Manjari OHALA.

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44) MATISOFF 1973, p. 21.

45) All items given in phonemic transcription.

46) Homophonous with /'dāe/, 'gave'.

47) Adapted and expanded from the Swadesh 100 Word List by the authors. Items given in parentheses are Urdu equivalents of the English, where more than one translation is possible.

48) Occurrence of tones with words for "this" and "that" varies according to context, so these tones have not been given lexical status.

49) 'to look at' is /puth tho:n/ ([ˈpʊ̯th ˈtho:n]). Its precise meaning is 'to move the head and look at (something)'.

50) Also means 'to show'.